

2. NOTES ON CLIMBING OF WATERFALL BY NARROW-MOULTHED LAMPREYS AT BEEDELUP BROOK ON FEBRUARY 10th, 1919.

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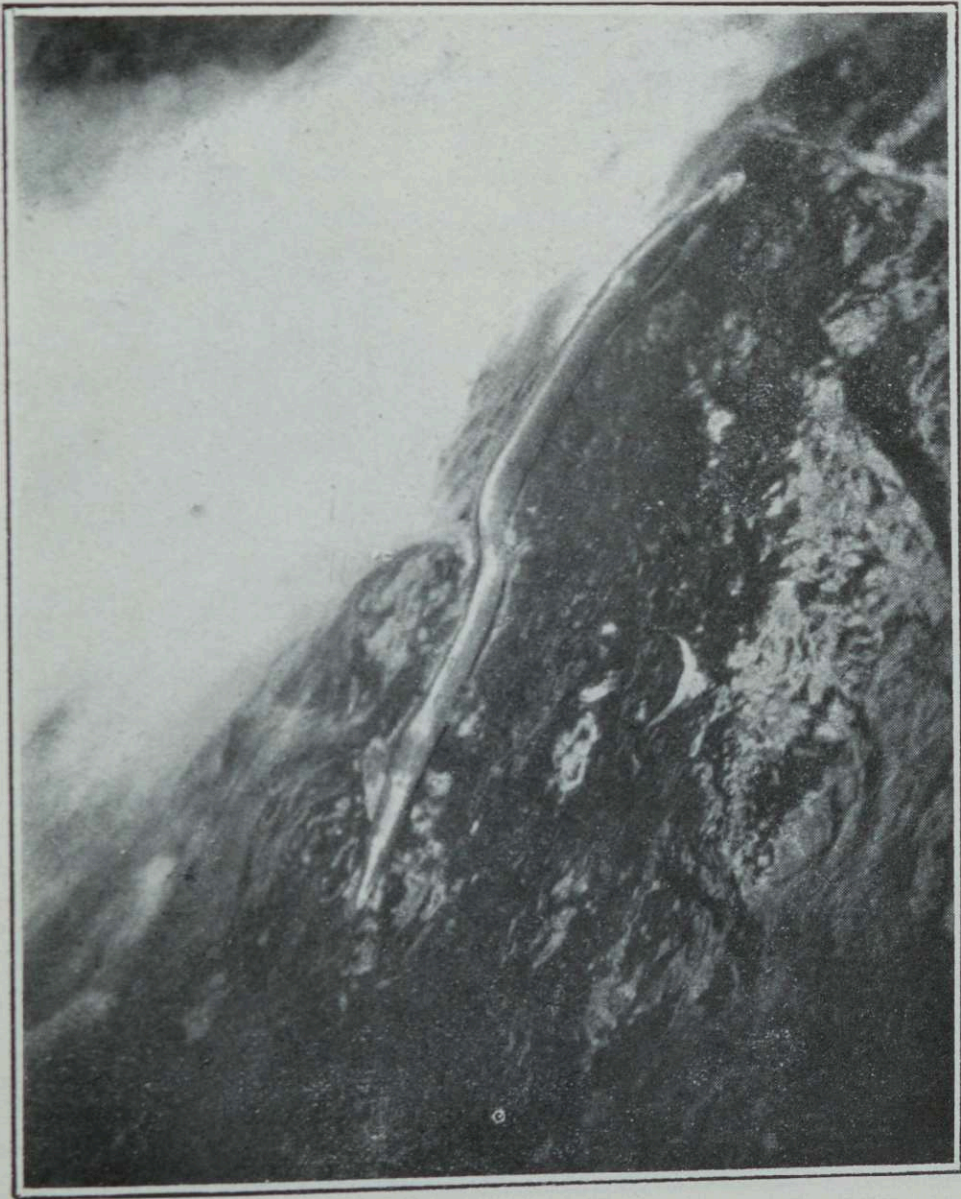
From the township of Pemberton, on the Big Brook, a road runs south, and about six miles down the Nannup Road runs off in a north-westerly direction. About 23 miles from Pemberton the road crosses Beedelup Brook, a small tributary of the Carey Brook, which flows into the Donnelly. Three hundred yards up from the crossing the brook comes down the hillside in a long series of waterfalls, some being 30 feet high. In the centre of the fall the water attains considerable force, but at the edges, where about two inches depth of water slide over the inclined plane of the rocks, the flow is much less rapid, and it was here that the lampreys were observed climbing. When first observed they were ascending one of the main falls of the series, where the water was shooting down a steep surface making 75deg. with the vertical and about 20 feet high. About 20 were making their way up this, and had already negotiated several smaller falls further down the hillside. The lampreys had a firm grip on the rock at the shallow margin of the fall and were gradually pushing their way upwards by a series of short jumps. To accomplish this the body was first bent (Fig. 1), suddenly straightened, and in nearly every case a new grip an inch or sometimes up to three inches higher was obtained. Occasionally, however, the animal failed to get a fresh grip, in which case it was swept down by the rush of water, sometimes right to the foot of the fall, though very often it would obtain a grip on the way down and resume its interrupted ascent. The ascent was spasmodic. After a series of jumps, resulting in an advance of two or three feet, the lampreys clung to the rock and rested for some minutes. They were unable to obtain any grip on dry rocks, and if the water was cut off from around them, by the placing of the hand above their point of attachment, for instance, they immediately lost their grip and shot away down the fall. Too strong a current, on the other hand, prevented them from ascending, for when they made a jump they would be swept back. The most favourable area seemed to be the margin of the fall under about two inches of water. This was enough to enable them to get a hold, and when they jumped the main part of the jump was accomplished in the air, so that the retarding action of the rushing water was minimised. A slight touch from the hand diverted their attention from the main business of

maintaining their hold on the rock. It was noticed that a large number were scratched and cut on the back, and this was probably due to accidents in the ascent, for the falls were rough, and a lamprey being swept down could easily be damaged on the jagged edges. It is just possible that some of the cuts were due to the attacks of gilgies or marran, because further down the stream in a small, still pool a gilgie was observed to attack a lamprey and give it a nip on the back.

Further search down the stream resulted in the finding of a number of other lampreys all heading up-stream. They were able to travel rapidly over dry rocks from one pool to another, or across small meanders in the brook, but as a rule preferred to travel by water. Of course, in ascending the falls, all the travelling was by water. About 50 were observed altogether, and these were all within a strip of the stream about a quarter of a mile long. The largest was about 2 feet 3 inches long and the smallest 1 foot 6 inches.

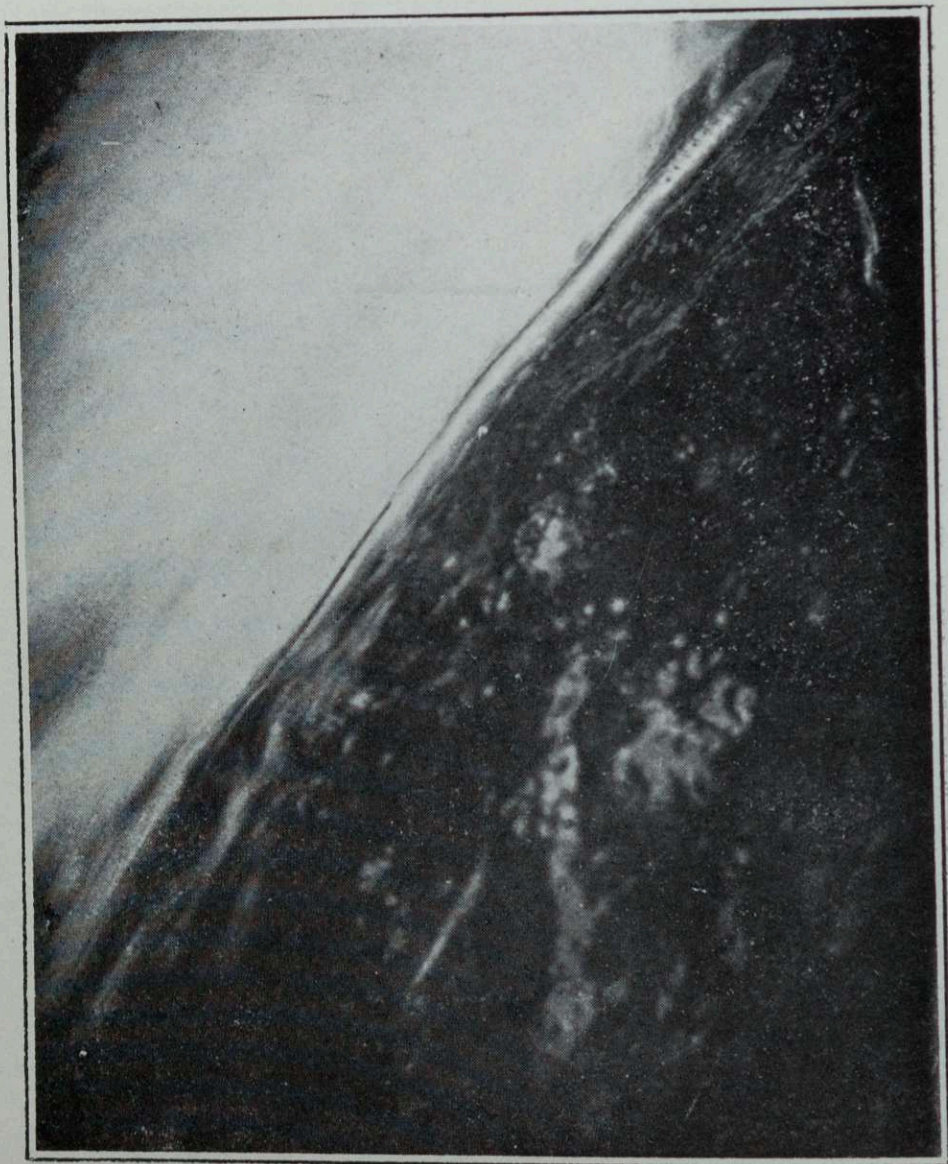
None of the local residents had observed lampreys before, either in Beedelup or any of the other brooks in the district, except Mr. Martin, of Pemberton, who said that some years ago he had seen several stranded on the flats of the Big Brook after a flood.

Plate VI.



Lamprey ascending a waterfall (first position).

Plate VII.



Lamprey ascending a waterfall (second position).